

What is claimed is:

1. A printing plate material comprising a substrate and provided thereon, a component layer comprising a hydrophilic layer and an image formation layer, the hydrophilic layer being provided closer to the substrate than the image formation layer, wherein the hydrophilic layer contains an electron providing dye precursor, the image formation layer contains an organic electron accepting developing agent, and the component layer contains a light heat conversion material.

2. The printing plate material of claim 1, wherein the image formation layer contains a heat melting material with a melting point of 60 to 200 °C.

3. The printing plate material of claim 2, wherein the heat melting material is such that it alone does not exhibit ink receptivity, and when it is heat melted and mixed with the electron providing dye precursor or the electron accepting developing agent, it exhibits ink receptivity.

4. The printing plate material of claim 3, wherein the heat melting material is a fatty acid amide.

5. The printing plate material of claim 1, wherein the image formation layer contains a water soluble material.

6. The printing plate material of claim 1, wherein the hydrophilic layer is porous.

7. The printing plate material of claim 1, wherein the electron providing dye precursor has a melting point of 50 to 300 °C, and the electron accepting developing agent has a melting point of 50 to 300 °C.

8. The printing plate material of claim 7, wherein the electron providing dye precursor has a melting point of 100 to 200 °C, and the electron accepting developing agent has a melting point of 100 to 200 °C.

9. The printing plate material of claim 1, wherein the coating amount of the electron providing dye precursor is from 0.05 to 1 g/m² of the printing plate material.

10. The printing plate material of claim 1, wherein the amount of the organic electron accepting developing agent is from 0.05 to 2 g/m² of the printing plate material.

11. The printing plate material of claim 1, wherein the hydrophilic layer contains a metal oxide having an average particle size of from 3 to 100 nm.

12. The printing plate material of claim 1, wherein the component layer is comprised of the hydrophilic layer, and the image formation layer.

13. A printing plate material comprising a substrate and provided thereon, a component layer comprising a hydrophilic layer and an image formation layer, the hydrophilic layer being provided closer to the substrate than the image formation layer, wherein the component layer contains a light heat conversion material, a fatty acid amide, and a substance, which when it is heat melted and mixed with the fatty acid amide, exhibits ink receptivity.

14. The printing plate material of claim 13, wherein the substance is an electron providing dye precursor or an organic electron accepting developing agent.

15. An image formation method comprising the steps of:
exposing the printing plate material of claim 1,
employing an infrared laser;

melting the organic electron accepting developing agent at exposed portions so that the melted agent permeates the hydrophilic layer to form a color image in the hydrophilic layer; and

then removing the image formation layer at unexposed portions.

16. The image formation method of claim 15, wherein the removing is carried out on a printing press employing a dampening water or a printing ink.

17. The image formation method of claim 15, wherein the exposing is carried out employing infrared laser installed in a printing press.